



# Adhesion Test Apparatus Model 525



Model 525-B (Concrete Test)



Model 525

testing equipment for quality management



## Technical Description

ASTM D 4541

Pull off Test

## Purpose and Application

The **Adhesion Test Apparatus, Model 525**, measures adhesion using the adhesion test acc. to ASTM D 4541. All coating materials to which a test cylinder can be stuck with existing adhesives can be examined.

The apparatus is entirely mechanical and requires no electrical supply, which makes it particularly suitable for applications in the field requiring mobile equipment.

Model 525 is of robust construction and easy to operate making it ideal for applications under severe operating conditions.

## Principle of Test

A test cylinder (dolly) is stuck to the coating with an adhesive quality and tensile strength and the coating is then pulled off under defined conditions. The tensile stress required for this and a visual examination of the surface that have been separated provide the required information of the adhesive quality of the coating.

It is to be noted that this method of measuring adhesion will give results which are not generally directly comparable with the results from other methods: the cross cutting test procedure mainly shear forces on the coating whereas the force exerted by Model 525 acts perpendicular to the surface.

## Design and Function

The **Adhesion Test Apparatus, Model 525** is made up of a circular housing with three legs containing a concentrically positioned compressing spring. The housing is closed up by means of a cylinder which has scales for reading off the tensile stress and is fitted into the housing from the top.

The three components are coupled by a threaded spindle at the top end of which is fitted either a hand wheel or hexagonal nut and that carries at its bottom end the dolly grip. A pin prevents the dolly from turning relative to the housing. When the parts are screwed together the spring generates a force which is transmitted from the dolly grip to the dolly itself. Simultaneously the cylinder is pressed into the housing taking a maximum reading pointer with it. The pointer holds the maximum force that was reached after the spring has been released.

The cylinder carries two scales for reading off the tensile stress in N/mm<sup>2</sup> and lb/sq in. The tensile force is applied to an area of 314 mm<sup>2</sup> or 1964 mm<sup>2</sup> corresponding to the dolly diameter of 20 mm and 50 mm, respectively.

### Reference Class:

All versions of Models 525 are supplied with a Manufacturer's Certificate M in accordance with DIN 55 350-18 that includes among others the following information:

Actual and setting values of the tensile stress, product identification, test equipments used with calibration status, date, name of inspector.

At 5 values evenly spread over the measuring range the accuracy of the tensile stress scale is determined (maximum permissible tolerance 3%).

## Technical Data

Model	Dolly dia.	Measuring area		Scale	
	mm	N/mm <sup>2</sup>	lb/in <sup>2</sup> *)	N/mm <sup>2</sup>	lb/in <sup>2</sup>
525 - 5	20	5	700	0.5	100
525 - 10	20	10	1500	1.0	100
525 - 25	20	25	3500	2.5	500
525 - B	50	4,5	650	0.5	100

\*) Max. tolerance 3 %

Model	Dimensions (mm)	Weight (kg)	
525-5/10	L x W x H	3.0	in carrying case (complete)
525-25	ca. 350 x 265 x 85	3.8	
525-B		4.4	
525-5/10	∅ ca. 82 x 185	1.2	Testing instrument (separate)
525-25	∅ ca. 70 x 180	1.6	
525-B	L x W x H ca. 115 x 85 x 190	2.0	

Order Information	
Order-No.	Description
0143.01.31	<b>Adhesion Test Apparatus, Model 525-5</b> Measuring range 0 - 5 N/mm <sup>2</sup> / 0 - 700 lb/in <sup>2</sup> , dolly 20 mm dia.
0143.02.31	<b>Adhesion Test Apparatus, Model 525-10</b> Measuring range 0 - 10 N/mm <sup>2</sup> / 0 - 1500 lb/in <sup>2</sup> dolly 20 mm dia.
0143.03.31	<b>Adhesion Test Apparatus, Model 525-25</b> Measuring range 0 - 25 N/mm <sup>2</sup> / 0 - 3500 lb/in <sup>2</sup> dolly dia. 20 mm
0143.04.31	<b>Adhesion Test Apparatus, Model 525-B</b> Particularly suitable for measurements on <b>concrete surface</b> . Measuring range 0 - 4,5 N/mm <sup>2</sup> / 0 - 650 lb/in <sup>2</sup> , dolly 50 mm dia.
<u>Scope of delivery includes:</u> (for Models 525-5/-10) dollies, dolly holder, base ring, adhesive*, cutting tool, carrying case and operating instructions (for Model 525-25) dto., and additional special wrench (for Model 525-B) dollies, adhesive*, special wrench, carrying case and operating instructions	

\* **Note:** 2-component epoxy resin adhesive has been successfully used for many years for a variety of materials. However, the best possible suitability for bonding any surface cannot be guaranteed across the board. Even if experience has shown for the clear majority of the common application and requirements and has already confirmed a corresponding suitability for many years, the almost unlimited variety of possibly involved materials may also result a different suitability.

Accessories	
Order No.	Description
0313.01.32	Special Cutting Tool, with diamond cutters for cutting around the dolly 20 mm dia. before the adhesion test.
0313.02.32	Special Cutting Tool, as under Ord.-No. 0313.01.32, but for dollies 50 mm dia.
0789.01.32	Special Glue for Concrete Tests

Subject to technical variation.  
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